Introduction

Situated midway between Richmond, Virginia and Washington, D.C., the George Washington Regional Commission (GWRC), formerly the Rappahannock Area Development Commission (RADCO) Planning District, is one of rapidly changing land use patterns. Straddling the East Coast's most heavily traveled interstate, I-95, the area is made up of Stafford, King George, Spotsylvania and Caroline counties, along with the City of Fredericksburg and the towns of Bowling Green and Port Royal. As the highly urbanized I-95 corridor grows to the east and west, nearby agricultural areas absorb the pressures of the rapidly expanding population base and its increasing need for housing, transportation and services. Expansive agricultural tracts interspersed with large-lot suburban properties and typical suburban subdivisions flank the intensely developed interstate corridor.

The region continues to experience a rapid growth rate. In 2000, the region had a population of 241,044. By 2005, the population had increased to 296,900, an increase of 23 percent. In fact, all the localities in the region experienced growth in that five-year period. Future growth is anticipated to be rapid, with the population in the region projected to increase 58 percent to 380,700 in 2020 from its 2000 population level of 241,044. Stafford, Spotsylvania and King George counties are among the fastest growing in the state, with 2000-2005 growth rates of 26.9 percent, 26.1 percent and 19 percent, respectively.

The presence of Lake Anna has provided the catalyst for the development of a large retirement community. As the population of the area continues to grow, conflicting interests will compound the task of protecting and managing the region's resources. In preparing for the future, plans for Region 16 should include the protection and preservation of natural and manmade resources, access to outdoor recreational facilities and open space for all residents, and the development of livable communities. Resource protection strategies should include consideration for land uses immediately adjacent to the significant historical and natural resources of the region. It is essential that these unique resources not be compromised by the negative impacts of inappropriate development.

Tourism is a key element in the region's economy. With an abundance of historical and cultural resources of both state and national significance, the area is a popular tourist destination. Civil War battlefields, historic buildings and gardens attract more than a million visitors to the region every year. Linking sites through the development of a well-integrated multi-use trail system will provide recreational opportunities for residents as well as visitors.

Proposed major development in the Fredericksburg area along the Rappahannock River at I-95 will have a considerable impact on the existing open space and the character of the region. There are approximately 2,500 sites slated for development to include a mix of offices, hotels, convention centers, homes and retail establishments. Project design considerations should include site selection and treatment that is suitable to the topography, sensitive to environmental conditions and respectful of local history. Of particular importance is the location selected and the site design developed for the national slavery museum to be included in this development project. Care must be taken to create an atmosphere of solemn reflection and dignity appropriate to the theme of the museum.

Bisecting the region on a north-south axis, roughly coinciding with the fall line, I-95 marks not only the area of most rapid development, but also the boundary between the rolling hills of the Piedmont to the west and the flatter, gently sloping Coastal Plain to the east. Many rivers and their countless tributaries flow across the region. From the Potomac River in the north and south to the Rappahannock, the Matta, the Po, the Ni (coalescing to form the Mattaponi), and the North Anna rivers, the rivers and streams of the region provide ample opportunities for many types of waterbased recreational activities. Flowing eastward across the region, rivers lose their rapids and flashy characteristics more typical of the Piedmont to widen into smooth-flowing tidal rivers flanked by wide floodplains with broad wetlands in the comparatively flat Coastal Plain. The Rappahannock River is valued as a recreational resource as well as for its scenic beauty. From its headwaters at Chester Gap to the Mayfield Ferry Farm Bridge below Fredericksburg, the Rappahannock has been designated a state scenic river. The York, Rappahannock and the Potomac serve the region as gateways to the Chesapeake Bay.

Recommendations applicable to all regions are found in chapters III through IX. To meet needs established in the 2007 *Virginia Outdoors Plan (VOP)*, it is important to integrate these recommendations with those that follow for Region 16 into regional and local planning and development strategies.

Outdoor recreation

For a general discussion of outdoor recreation trends, issues and planning considerations in Virginia, see Chapter II: Outdoor Recreation Issues, Trends and Survey Findings, and Chapter VII: Outdoor Recreation Planning and Related Issues.

Results of the 2006 Virginia Outdoors Survey (VOS) indicate that despite the availability of a wealth of resources, user facilities for some activities remain marginal. Respondents to the survey indicated a need for access to recreational waters for boating, fishing, swimming and beach use. A similar deficiency is seen in the limited number of miles of trails available for hiking, walking, bicycling, jogging and horseback riding. In addition, public playgrounds, separate from those associated with local schools, and public swimming pools were listed as desired amenities (See Table X-16). Local plans for the future also include small neighborhood parks, larger regional facilities, trails that provide links within and between communities and access to water resources. Local governments within the I-95 corridor area must also respond to an increasing need for athletic fields.

The creation of the Fredericksburg-Stafford Park Authority was an important step in the development of a regional approach to outdoor recreation planning. As the area continues to grow, the need for multi-jurisdictional resource development and management will increase. Preservation of open space and natural resources within this rapidly changing area will be a challenge to all localities. The quality of life now enjoyed by residents of the area will be assured through comprehensive region-wide planning and the implementation of effective growth management strategies.

Based on input from public meetings, there is continued need for transportation alternatives, specifically trails for walking, hiking and bicycling. If developed with multiple uses in mind, a comprehensive trail system could link small communities and specific destinations, thus providing exercise options and

transportation alternatives. Safe cycling and walking opportunities should be provided for the entire community, but especially around Mary Washington University.

All localities in Region 16 are served by a parks and recreation department. The towns of Bowling Green and Port Royal do not have their own departments, but are served by the Caroline County Parks and Recreation Department. According to the Commonwealth of Virginia Auditor of Public Accounts, Comparative Report on Local Government Revenues and Expenditures (year ended June 30, 2005), per capita spending on parks and recreation for each locality in this region was: Stafford, \$38.17; King George, \$28.81; Spotsylvania, \$26.90; Caroline, \$10.91; and the City of Fredericksburg, \$107.95. Bowling Green and Port Royal were not listed in the report. This compares to a statewide per capita spending on parks and recreation of \$55.31, including \$85.51 from towns, \$43.75 from counties, and \$76.45 from cities.

Recognizing the impediments to open space preservation in the area, local governments are developing strategies for the development of comprehensive, regional park systems. Stafford County's Needs Assessment, for example, encourages the aggressive acquisition and development of properties noting, "Delays in implementation will only increase costs." Since current growth rates in the area have exceeded projections, many localities find themselves behind the curve in meeting recreational needs. Open space protection strategies should include inter-jurisdictional efforts to develop and maintain greenways and regional parks.

Localities are encouraged to work with local residents to identify and preserve the many historic features found throughout the region. Native American village sites, Civil War trenches and battlefields, historic river fords, the canals and mill sites along the Rappahannock River, and the historic Spotswood furnace – all mark significant moments in the Commonwealth's history, worthy of recognition and preservation.

Land conservation

A detailed discussion on statewide awareness of the need for conservation of farmland, parks, natural areas, and historical and cultural resources is found in Chapter III: Land Conservation. Conservation lands in the region are shown Map X-32.

Land Trusts Operating in Region 16

- APVA Preservation Virginia
- The Chesapeake Bay Foundation
- Civil War Preservation Trust
- The Conservation Fund
- The 500-Year Forest Foundation
- Friends of the Rappahannock
- The Nature Conservancy
- Northern Neck Land Conservancy
- The Northern Virginia Conservation Trust
- Potomac Conservancy
- Virginia Department of Historic Resources
- Virginia Outdoors Foundation

Land conservation recommendations include:

- In order to protect watersheds and broad areas of natural significance, federal, state, regional and local agencies and organizations should conserve portions of the Quantico and A.P. Hill military installations.
- Local and regional agencies and organizations should develop conservation measures to protect the water quality of the Mattaponi River and the health of adjacent riparian lands.
- Federal, state, regional and local agencies and organizations should use conservation measures to buffer the Fredericksburg area battlefields, as well as recognize the need to set aside additional properties that are currently unprotected.
- State, regional and local agencies and organizations should develop conservation measures to protect The Hopyard.

Green infrastructure

Information about green infrastructure is found in Chapter IV: Green Infrastructure. Regional recommendations for green infrastructure include:

- Local and regional agencies should become informed and educate constituents about green infrastructure planning, including guidance on local zoning initiatives for changing community design and transportation systems.
- A regional green infrastructure plan and a planning model should be developed and promoted.

Programs

The following recommendations integrate statewide program initiatives into responsive regional strategies for outdoor recreation and conservation. The statewide program areas addressed in this section include: trails and greenways, blueways and water access, historic and landscape resources, scenic resources, Scenic Highways and Virginia Byways, scenic rivers, watersheds, environmental and land stewardship education, and the private sector. Recommendations are bulleted or numbered and are not sequenced by state or local priorities. Numbered recommendations are site specific to the regional map at the end of this section (see Map X-33).

Trails and greenways

For more detailed information, see Chapter VII: Outdoor Recreation Programs and Initiatives, Greenways and Trails.

Statewide trunkline trails

① Local, regional and state agencies and organizations should implement development of the **East**Coast Greenway. This greenway is proposed to span almost 3,000 miles from Maine to Florida and aims to connect all the major cities of the East Coast along a continuous, off-road path. This trail will make use of waterfront esplanades, canal paths, railroad corridors and park paths for cyclists, hikers, skaters, equestrians and people with disabilities as it connects urban, suburban and rural America.

2 Local and regional agencies and organizations should implement the **Potomac Heritage National Scenic Trail** (PHNST).

The PHNST connects the outstanding natural and cultural features along a 700-mile corridor of the Potomac River from the Chesapeake Bay to the Allegheny Highlands and includes a water-based, blueway component. The National Park Service (NPS) manages this partnership, which has been the target of significant investments in funds, time and expertise by individuals, organizations and government agencies. Due to the National Scenic Trail designation, localities that host the PHNST should protect its corridor with buffers, setbacks, vegetative screening and similar viewshed preservation tools. Local government should identify the PHNST in all local comprehensive plans with development to follow as conditions permit.

The 50-mile segment of the PHNST in Region 16, following the Potomac River through King George and Stafford counties, will link the area to state and county parks, wildlife refuges and wetlands. It will provide access to historical and cultural features along with marinas, schools, commercial areas and neighborhoods along the Potomac River waterfront. A link to the City of Fredericksburg is included in the plan, and a link to Barnesfield Park in King George County is recommended. Three Stafford trails have already been designated as part of the PHNST system. The planned Government Island Trail, Falmouth-Ferry Farm Trail and Aquia Creek Water Trail were all chosen for their access to a host of historic, educational and recreational resources. They join hundreds of other locally managed trails, selected by the NPS, within a 425-mile corridor between the Chesapeake Bay and the Allegheny Highlands.

Other trails

- 3 Local, regional and state agencies and organizations should develop a greenway, hiking and water trail system along the **Rappahannock River**. This system would link the upper and lower Rappahannock basins. The segment of the trail in Region 16 could provide opportunities for canoe-in camping and access to historic sites and rock climbing areas. Preservation and enhancement of mill sites and the canal system along the Rappahannock River are also suggested.
- 4 If identified issues are resolved, the **Dahlgren Junction Railroad corridor**, listed in the *VOP* since 1989, has potential as a connector multi-use trail and an alignment for the PHNST.
- **5** Local, regional and state agencies and organizations should develop the **Fredericksburg Orange** trail along the old **Virginia Central Railroad** linking Fredericksburg to Orange. With two small sections complete, one in Alum Spring Park maintained by the City of Fredericksburg, and the other linking a school and playing fields in Spotsylvania County, the proposed trail would provide access to Civil War battlefields, historic properties, schools, playgrounds and commercial sites.
- **6** The Fredericksburg-Stafford Park Authority should complete the **South Stafford Bicycle Trail**, a three-mile trail linking two parks in Stafford County.
- The City of Fredericksburg and the Fredericksburg-Stafford Park Authority should link the **South Stafford**

Bicycle Trail with the **Old Mill Park Trail** proposed in the City of Fredericksburg.

8 Local and state agencies should enhance and properly identify Interstate Bicycle Route 1.

Water access

Blueways and water access are critical in a water rich state like Virginia. Despite the abundance of rivers and streams in the region, public access to them is limited. Region 16 residents cite a scarcity of boat launches and minimal opportunities for bank fishing and swimming. Where the opportunity exists, access through land acquisition or use agreement should be pursued. The development of portages around dam sites and other river obstacles is encouraged to facilitate river use. In addition, water trails should be developed along the Rappahannock, the Potomac and other rivers in the area. A discussion of the water access in the Commonwealth can be found in Chapter VII: Outdoor Programs and Initiatives, Water Access and Blueways. Water access recommendations include:

- The Virginia Department of Transportation (VDOT) and local government should expand public access to water by developing parking and launch facilities at bridge crossings.
- Regional and local agencies should establish cooperative agreements among localities, other agencies and private landowners to meet the increasing need for public access to recreational waters.
- Regional and local agencies should identify strategies to make additional waterfront resources available for public use.
- Regional and local agencies should provide adequate support facilities and services, such as restrooms, concessions, parking and maintenance for existing and proposed public water and beach access areas. An example would be the proposed Aquia Creek Water Trail in Stafford County.
- Regional and local agencies should acquire or maintain access to existing public beaches and water access sites that may be jeopardized by changes in land use or development activities.
- Use Local, regional and state agencies and organizations should provide additional boating and fishing access at Lake Anna.
- Local, regional and state agencies and organizations should provide additional access on all rivers in

the region including the **Potomac**, **Rappahannock**, **North Anna**, **Matta**, **Po**, **Ni** and **Mattaponi**.

The Potomac River Water Trail helps individuals explore this almost 100-mile route the original way—by water. On the trip, visitors can experience the Potomac's natural areas and wildlife and parts of the region that seem little changed from earlier times. Local, regional and state agencies should develop a water trail along the Potomac River from Washington, D.C. to the Chesapeake Bay based on the guide prepared by the Department of Conservation and Recreation (DCR) and Maryland's Department of Natural Resources.

The Rappahannock River, the longest free flowing river in the Chesapeake Bay watershed, extends from its origin at Chester Gap in Shenandoah National Park in western Virginia to Stingray Point in the Chesapeake Bay, a total of 184 miles. The Friends of the Rappahannock and DCR should develop a water trail along a portion of the Rappahannock. The recommended water trail will cover historical paddling trips from Kelly's Ford to the Fredericksburg City Docks, the middle section of the river.

Historic and landscape resources

Consideration should be given to evaluating potential historic and landscape recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Historic and Landscape Resources. Local and regional recommendations include:

- Regional and local agencies should identify historic and archaeological resources that can be used for tourism, recreation and education. These resources should be included in local land use planning and decision-making processes to promote preservation and protection.
- Regional and local agencies should build local historic attractions, historical societies, museums and other tourism organizations in the region to include the Virginia Association of Museums, Virginia Civil War Trails, APVA Preservation Virginia, the Virginia Main Street Program and others to enhance local heritage tourism, educational and recreational offerings.
- Regional and local agencies should encourage local governments and private organizations that own historic properties in the region to manage properties effectively for long-term protection and to maximize public benefit consistent with the nature of the historic property.

- Regional and local agencies should recognize the multiple historic and cultural resources within the rural landscape through rural historic districts.
- Regional and local agencies should support the creation of other heritage area programs to promote tourism and preservation in distinctive regions.
- Local government and local and regional organizations should work with the state to meet the critical need for a county-wide survey of the historic and architectural resources of King George County.
- A bill to amend the National Trails System Act to designate the Washington-Rochambeau Route as a National Historic Trail was introduced in both houses of Congress in July 2006 and is currently in committee. This 600-mile route was followed by the American and French armies in 1781 and 1782 under George Washington and the Comte de Rochambeau as they traveled to, and returned from, the siege and victory at Yorktown. This route, which runs through Stafford County, Fredericksburg, Spotsylvania County and Caroline County en route to Yorktown, has also been designated as a special highway by the state. The state and local agencies should sign this designated route and evaluate road segments for scenic character and future protection for the scenic integrity of the route.

Scenic resources

Consideration should be given to potential scenic recommendations in this region. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Resources. Local and regional recommendations include:

- Regional and local agencies should develop corridor management plans for scenic byways, blueways, greenways and scenic rivers to assure preservation of the scenic quality of the corridor.
- Regional and local agencies should protect the scenic value of lands adjacent to publicly owned properties, as well as the scenic value of working agricultural and forestal areas key to maintaining a sense of place and economic vitality of the region. Scenic attributes to be considered include:
 - Encourage development away from hilltops to protect significant vistas.
 - Consider timber harvesting impacts on key viewsheds.
 - Protect viewsheds along river corridors and scenic byways.

- Create scenic overlooks and vista cuts along Virginia byways and scenic highways to enhance the visual experience of traveling.
- Regional and local agencies and organizations should assess scenic assets for this region to determine appropriate protection strategies.

Scenic highways and Virginia byways

Opportunities to traverse Virginia's scenic and cultural landscapes are enhanced through nationally recognized designation. For more detailed information, see Chapter VII: Outdoor Programs and Initiatives, Scenic Highways and Virginia Byways.

Scenic roads recommendations for the region include:

- Regional and local agencies should recognize and nominate scenic roads for designation as Virginia byways.
- Regional and local agencies should partner with other state, local and professional organizations to develop corridor management plans to protect the scenic assets of byway corridors.
- Regional and local agencies should incorporate
 Virginia byways and scenic highways into local com prehensive plans and zoning ordinances to ensure
 viewsheds are conserved and the sense of place
 retained along these corridors.
- Regional and local agencies should support designation of nationally qualified historic corridors to increase civic engagement and foster heritage tourism.

Scenic roads recommendations for the region include:

• There has been a tremendous interest in thematic trails including the Civil War Trails, the Wilderness Road Trail, the Birding and Wildlife trails, the Revolutionary War trails, the African-American Heritage Trail and other driving tour routes. Regional and local agencies and organizations should develop a series of regional maps or booklets that describe and help locate the resources and services. This product would support and expand the information available on the *Scenic Roads in Virginia* map.

The following road segments are potential Virginia Byways and should be evaluated to determine if they qualify for designation as Virginia Byways:

13 Route 208 in Spotsylvania County through the battlefield area to the Louisa County line.

10 Route 3 in King George, Stafford and Spotsylvania counties.

Scenic rivers

For detailed information about the Virginia's Scenic Rivers Program and its purpose, benefits and designation process, see Chapter VII: Outdoor Recreation Programs and Initiative, Scenic Rivers. The following river section has been designated as a State Scenic River:

The Rappahannock River from its headwaters to the Route 3 Bridge at Ferry Farm is a legislatively designated scenic river. Impacts to the **Rappahannock River** from proposed commercial development along the riverbanks should be carefully evaluated. As a state scenic river, the Rappahannock River should be protected as a unique regional resource. Inappropriate development that compromises the scenic qualities of the river and the enjoyment of its natural beauty should be discouraged. Local governments should establish appropriate setbacks and buffers should be incorporated into plans to assure the preservation of the river corridor and consideration for impacts to water quality.

The following river segments qualify for designation as Virginia Scenic Rivers:

- The North Anna River in Caroline County, from Route 738 to Route 1 at Chandler Crossing.
- The **Rapidan River** from Germana Ford to its confluence with the Rappahannock River.

The following river segments are potential Virginia Scenic Rivers and should be evaluated to determine suitability for designation:

- The **Rappahannock River** from the Route 3 Bridge at Ferry Farm to the Mayfield Bridge in Fredericksburg to the Chesapeake Bay.
- 19 The Mattaponi River in its entirety.
- 20 The North Anna River from Lake Anna to Route 738.
- The **North Anna River** from Route 1 at Chandler Crossing to its confluence with the Pamunkey River.

Watershed resources

For information about Virginia's watershed programs, see Chapter VII: Outdoor Programs and Initiatives, Virginia's Watershed Programs.

Watershed groups in Region 16

- Alliance for the Chesapeake Bay
- Chesapeake Bay Foundation
- Friends of Stafford Creeks
- Friends of the Rappahannock
- Friends of the Rivers of Virginia
- Virginia Conservation Network

Environmental and land stewardship education

For detailed information on Environmental and Land Stewardship education, see Chapter VII: Outdoor Programs and Initiatives, Environmental and Land Stewardship Education. Environmental and land stewardship recommendations for this region include:

 Local agencies and organizations should evaluate the existing outdoor environmental education opportunities and identify potential additions and opportunities for improving accessibility to outdoor educational programming.

Federal programs

For information on federal programs affecting Virginia's outdoor recreation and conservation opportunities, see Chapter IX-A: Resource Agencies. Local and regional recommendations are listed by agency.

National parks

- Local and regional government, user groups and nonprofits should work with the NPS to revise policy in order to allow mountain bikes to use appropriate national park trails.
- The Chesapeake Bay Gateways Network, managed by the NPS, connects visitors with the Chesapeake Bay and its rivers through 150 exceptional parks, wildlife refuges, museums, sailing ships, historic communities, trails and more. Gateways are the special places where individuals can experience the authentic Chesapeake. Local, regional and state agencies and organizations work to market the Chesapeake Bay Gateways in this region, which include the Caledon Natural Area, the Potomac Gateway Welcome Center, the Rappahannock River Water Trail and the Potomac River Water Trail.

The Fredericksburg and Spotsylvania National Military Park, at 9,000+ acres, is the largest military park in the world. Composed of several battlefield sites, cemeteries and historical structures, the park

hosts more than one million visitors annually. Localities should work with the NPS to link park sites with other attractions within the region through the development of an integrated trail system. In order to protect this important historic resource, localities should strongly consider the impacts of future development in areas adjacent to park lands. The park should work with the Virginia Department of Transportation (VDOT) and local jurisdictions on traffic planning that accommodates the growing population yet protects the battlefields' historic resources

U.S. Fish and Wildlife Service (USFWS)

Established on May 28, 1996, the **Rappahannock River Valley National Wildlife Refuge** is a component of the Eastern Virginia Rivers National Wildlife Refuge Complex, which also includes James River and Presquile national wildlife refuges. The USFWS is authorized to purchase up to 20,000 acres within the boundary refuge area. As of July 2001, a total of 4,800 acres had been purchased from willing sellers. The USFWS should continue to acquire these lands and manage the refuge and surrounding lands for appropriate recreation, public access and habitat protection.

Other federal facilities (military)

Fort A.P. Hill periodically hosts the international Boy Scouts of America Jamboree, an event attended by 40,000 participants in 2005. Local residents are interested in access to parts of this facility for trail use, specifically hiking, mountain biking, horseback riding and ATV use. User groups should contact appropriate authorities at A.P. Hill to develop working agreements for recreational use. Currently, each request is considered on a case-by-case basis.

A unique partnership that has developed around the Fort A. P. Hill military base will allow the Trust for Public Land to conserve the 1,320-acre Portabago Creek property for wildlife habitat through a conservation easement held by the Virginia Outdoors Foundation. The partnership involves the U.S.Department of Defense, the military installation and several conservation groups and agencies.

State facilities and programs

For a discussion of state facilities and programs throughout the entire Commonwealth, see Chapter IX-B: Resource Agencies. Local and regional recommendations are listed by agency or program.

State parks

Lake Anna State Park (2,810 acres) is in Spotsylvania County. Additional acreage has been acquired using the 2002 General Obligation Bond (GOB) acquisition funds. The acquisition further protects the park boundaries and the lake shore. Through the bond, the park was provided funding to construct 10 two-bedroom cabins and a full service (water and electric hook ups) campground. The need for picnic shelters continues to exist. The trail system has increased with approximately 14 miles of multi-use trails. Additional trails are planned for the new acreage.

Caledon Natural Area (2,585 acres) is in King George County. Although no new facilities were added with the 2002 GOB; the bond provides funds for trail improvements. With only nine miles of hiking trails in 2,585 acres, opportunities are great for additional trails. Interpretation and environmental education focusing on the bald eagle are prominent offerings at the park, but the site's natural and cultural resources offer extensive opportunities to expand interpretive and educational offerings. The proximity of Caledon to the Dahlgren Junction Railroad corridor and the Potomac Heritage National Scenic Trail creates additional educational and recreational opportunities for the park and region.

Widewater State Park (1,089 acres) is in Stafford County. Funding from the 2002 GOB funds was used to acquire this property. The master plan has not been developed and will need to be approved prior to any development on the site. The park has shoreline on the Potomac River and Aquia Creek providing additional open space protection in a rapidly developing region. In addition, much needed water access can be developed in a manner that enhances the shoreline. The potential also exists for the site to become part of the Potomac River Water Trail and Potomac Heritage National Scenic Trail.

State natural area preserves

Chotank Creek Natural Area Preserve in King George County is the only dedicated natural area located within the George Washington Regional Commission region. DCR has documented 308 occurrences of 85 rare species and natural communities here. Seventeen of these species are globally rare, and six are listed as threatened or endangered. As of November 2006, there were 116 conservation sites identified within Region 16. Sixty-nine sites (59 percent) are protected to some degree through ownership and management by state, federal and non-government organizations. However, only two sites are protected well enough to

ensure the long-term viability of the rare species and natural communities they support.

DCR recommends that all unprotected conservation sites, and all unprotected portions of partially protected sites, be targeted for future land conservation efforts. The appropriate method of protection will vary with each site but may include placing the site on Virginia's Registry of Natural Areas, developing a voluntary management agreement with the landowner, securing a conservation easement through a local land trust, acquiring the site through a locality or local land trust, dedicating the site as a natural area preserve with the current owner, or acquiring the site as a state-owned natural area preserve.

Within Region 16, DCR is particularly interested in protecting:

- Establishing a new natural area preserve at Crows Nest in Stafford County.
- Securing buffer lands around Fort A. P. Hill and Quantico Marine base.
- Protecting wetlands that support rare and threatened plant species.

State Fish and Wildlife Management Areas (WMA)

- The Department of Game and Inland Fisheries (DGIF) should continue to work with local and regional governments to support the Birding and Wildlife Trail program.
- The Pettigrew WMA is 934 acres in Caroline County. The area offers a broad range of opportunities for hunting and hiking. Ware Creek offers limited fishing opportunities.
- 29 The 462 acre Land's End WMA was established in 1966 and expanded in 1970. It consists of two tracts of land, the 50-acre Salem Church tract and the 412-acre Land's End tract, located in southeastern King George County. Land's End WMA is a mixture of open farmland, woodland and wetlands. It is bordered on two sides by the Rappahannock River and on one side by Jett's Creek. Due to deed restrictions, Land's End WMA has been managed primarily as a refuge for migrating waterfowl. Each winter, artic-nesting Canada geese are attracted by the thousands to feed in the abundant fields of corn, milo and winter wheat and to rest in the adjoining Nanzattico Bay. Bald eagles, deer, turkey and songbirds are also commonly sighted on Land's End WMA. DGIF should evaluate the management goal to promote wildlife viewing and waterfowl and wildlife habitat management research.

Other state lands

For a discussion of other state lands, see Chapter IX-C: Resource Agencies.

The following state-owned lands contain significant undeveloped open space that may have some potential for local recreational use. Each site should be assessed and, where appropriate, a cooperative agreement should be developed to make these resources available for local use as parks and open space.

 All community college properties should be explored to determine if undeveloped portions of those properties could be used to meet the recreation/ conservation needs of the region.

Transportation programs

- Local and regional agencies should develop alternatives to the use of private automobiles for daily activities. Transit systems, bicycle and pedestrian accommodations, improved community design, as well as a change in people's attitudes toward transportation alternatives will be needed for the transportation system of the future to meet capacity needs and energy constraints.
- Local and regional agencies should work with the Virginia Department of Transportation (VDOT) to implement Context Sensitive Solutions that accommodate multiple transportation modes.
- Local and regional agencies should recognize the need for a network of low-speed, low-volume roadways used by equestrians, pedestrians and cyclists, and they should include protections for this network in their comprehensive plan.
- Local and regional agencies should encourage the development of a permanent process for integrating the recommendations of local public health agencies, and they should include "active living" opportunities into all phases of transportation planning, land use planning and project design.

Local and regional parks and recreation departments

For a discussion of local and regional parks and recreation departments, see Chapter IX-D: Resource Agencies. Local and regional recommendations include:

- Local agencies and organizations should explore reclamation of abandoned landfills into new and needed parks.
- Local governments and agencies should consider cooperative management for the recreational use of private, corporate and state or federally owned lands in order to increase local access and meet outdoor recreation needs.
- Local and regional agencies should consider forming a regional park authority to facilitate management and the expansion of resources needed to best address the parks and natural areas along or in close proximity to the Rappahannock River. Partners could include the City of Fredericksburg, Stafford, Spotsylvania, Culpeper, Fauquier and Rappahannock counties. Technical assistance for initiating a regional park authority may be requested from the DCR. A source of seed funding would be helpful in generating interest among multi-jurisdictional partners.

Private sector

Much of the demand for outdoor recreation is met by the private sector. For a discussion of the private sector, see Chapter IX-E: Resource Agencies. The following recommendations pertain to this region:

- Outfitters, as well as local "Friends" groups on the Rappahannock and Rapidan rivers, should continue to enhance access and the quality of the recreational experiences on the rivers while contributing to local economies.
- Local governments and developers should give design consideration to the natural contours of the land when planning and developing.



Shipwreck off the shoreline of Widewater State Park. Photo by Elizabeth Daly.

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NI: not inventoried

1able X-16.	Activity	nia (Baseball	Basketball	Bicycling	Mountain	Other	Lake, river and	Power boating	Sailing	Saltwater fishing	Jet ski, per	Water skiin	Camping	Tent camping	Developed camping	Fitness trail use	Fields (combined)	Football	Soccer	Stream use (combined)	Freshwater fishing	Human-po	Rafting	Tubing	Golfing	Hiking, backpacking	Horseback riding	Ch.	ap Joaqing. running
Region 16 (George Washington Regional (Lake, river and bay use (combined)	Ďt.		hing	Jet ski, personal watercraft	Water skiing, towed on water		D	amping					bined)	ishing	Human-powered boating				Du			
shington Regional	Activity Days		384,863	749,395	938,195	120,833	817,363	840,309	339,842	52,283	317,186	59,545	71,454	221,914	141,746	80,168	585,573	1,013,135	336,937	676,198	569,888	425,238	106,890	11,038	26,723	640,471	270,131	79,877	222,204	3,703,403
(Commission)	Demand		92	178	29	o	58	13,599	8,191	452	1,784	933	2,239	1,309	836	473	47	213	71	142	332	299	27	2	ო	22	139	35	16	297
=xisting and Projed	Units		fields	goals	miles	miles	miles	water acres	water acres	water acres	water acres	water acres	water acres	sites	sites	sites	mile trails	fields	fields	fields	stream miles	stream miles	stream miles	stream miles	stream miles	courses	trail miles	miles	miles	mile trails
Commission) Existing and Projected Outdoor Recreation Needs	Supply		73	29	Z	Z	Z	37,998	တ	တ	တ	တ	S	6,265	74	6,191	20	123	112	-	236	တ	ဟ	တ	ဟ	279	92	18	Z	Z
tion Needs	2010 Needs		က	111				-24,399						-4,956	762	-5,718	27	06	-41	131	96					9	47	17		
	2020 Needs		27	166				-20,174						-4,550	1,022	-5,571	41	156	-19	175	199					13	06	27		

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 Virginia Outdoors Survey as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

NS: not inventoried separately

S: same as combined

NA: not applicable, no standard needed

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Activity	Activity Days	Demand	Units	Supply	2010 Needs	2020 Needs
Picnicking away from home	376,150	677	tables	930	47	350
Skateboarding	214,362	99	sites	Z		
Snow skiing or snowboarding	109,214	ო	ski lifts		က	4
Softball	435,695	78	fields	99	12	36
Sunbathing, relaxing on beach	1,071,808	77	beach acres	61	16	40
Swimming	2,904,630	187		Z		
Outdoor area	1,379,699	141	beach acres	61	80	124
Outdoor pools	909,149	38	slood	24	14	56
Indoor pools	615,782	7	slood	2	Ŋ	7
Tennis	374,116	234	courts	157	77	149
Used a playground	1,463,934	208	sites	94	114	179
Visiting gardens	196,063	22	sites	Z		
Visiting historic sites	658,770	99	sites	Z		
Visiting natural areas	512,377	87	sites	Z		
Volleyball	191,706	22	courts	O	48	65
Hunting	248,055	40,678	acres	108,599	-67,921	-55,283
Drive for pleasure	2,285,944	N A	AN	Z		
Driving motorcycle off road	39,213	18	miles	-	17	22
Driving 4-wheel-drive off road	105,729	NA A	AN	SN		
Walking for pleasure	8,388,571	NA	AN	Z		
Bird watching	79,877	NA		Z		
Other	81,330	ΑN	ΥN	₹		

Note: Demand multipliers used to create this chart are based on the Virginia Department of Conservation and Recreation's 2006 Virginia Outdoors Survey as measured at the regional level. Additional analysis is required to adjust these results for local conditions.

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(-) indicates surplus







